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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/803,875

03/19/2004

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1095.1306

7164

21171 7590 02/23/2010
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EXAMINER

LI, SHI K

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

02/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/803,875	Applicant(s) SAKAI ET AL.	
	Examiner Shi K. Li	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,7,9-12 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7,9-12 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 January 2010 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (EP 0 153 722 A2) in view of Persson (U.S. Patent 6,519,384 B2).

Regarding claim 21, Tamura et al. discloses in FIG. 5 a hybrid optical wavelength division multiplexer-demultiplexer for transmission and reception of wavelength division multiplexed (WDM) signal. The multiplexer-demultiplexer comprises a plurality of optical filters 34a, 34b, 34c and 34d. The difference between Tamura et al. and the claimed invention is that Tamura et al. does not teach arranging the filters to obtain a loss characteristic correspondence with a wavelength-dependent loss characteristic. Persson teaches in col. 2, line 10-17 that channels have the highest link losses are relayed through as few add/drop filter elements as possible. In particular, filter elements are arranged such that received channel wavelengths with a high link loss relative to an allowed link loss are dropped from said transmission medium upstream of received channel wavelengths with a low link loss relative to

Art Unit: 2613

an allowed link loss. One of ordinary skill in the art would have been motivated to combine the teaching of Persson with the optical wavelength division multiplexer-demultiplexer of Tamura et al. because the approach of Persson reduces the likelihood of a small number of channels sustaining significantly higher losses than other channels and thus increases the overall possible transmission distance. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the order of the filters to obtain a loss characteristic correspondence with a wavelength-dependent loss characteristic, as taught by Persson, in the optical wavelength division multiplexer-demultiplexer of Tamura et al. because the approach of Persson reduces the likelihood of a small number of channels sustaining significantly higher losses than other channels and thus increases the overall possible transmission distance.

The newly added limitation is described on pages 20-22 of instant specification. The teaching of Persson reads on the limitation. Persson teaches in col. 2, line 10-17 that channels have the highest link losses are relayed through as few add/drop filter elements as possible. In particular, filter elements are arranged such that received channel wavelengths with a high link loss relative to an allowed link loss are dropped from said transmission medium upstream of received channel wavelengths with a low link loss relative to an allowed link loss. In this way, influences of accumulated insertion loss caused by the presence of the optical filters are suppressed.

4. Claims 1, 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. and Persson as applied to claim 21 above, and further in view of Nielsen et al. (U.S. Patent 6,559,988 B1).

Art Unit: 2613

Tamura et al. and Persson have been discussed above in regard to claim 21. The difference between Tamura et al. and Persson and the claimed invention is that Tamura et al. and Persson do not teach that the optical filters have same insertion loss. However, it is well known in the art that filters of the same technology have same insertion loss. For example, Nielsen et al. teaches in FIG. 1 to arrange filters so that each wavelength has approximately same insertion loss. Nielsen et al. teaches in col. 5, lines 13-15 that thin film filter 128, 126, 124 and 122 have same insertion loss. One of ordinary skill in the art would have been motivated to combine the teaching of Nielsen et al. with the modified optical wavelength division multiplexer-demultiplexer of Tamura et al. and Persson because using filters of same technology simplifies the design and manufacture of the apparatus. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use filters of same technology for the multiplexer-demultiplexer, as taught by Nielsen et al., in the wavelength division multiplexer-demultiplexer of Tamura et al. and Persson because using filters of same technology simplifies the design and manufacture of the apparatus.

5. Claims 5, 7, 9-12 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al., Persson and Nielsen et al. as applied to claims 1, 3 and 22 above, and further in view of Persson et al. (U.S. Patent 7,110,673 B2).

Tamura et al., Persson and Nielsen et al. have been discussed above in regard to claims 1, 3 and 22. Regarding claims 5 and 7, the difference between Tamura et al., Persson and Nielsen et al. and the claimed invention is that Tamura et al., Persson and Nielsen et al. do not teach an OSC filter. Persson et al. teaches FIG. 2 an OSC filter 100 for separating OSC channel and the WDM channels. One of ordinary skill in the art would have been motivated to combine the

Art Unit: 2613

teaching of Persson et al. with the modified multiplexer/demultiplexer of Tamura et al., Persson and Nielsen et al. because an OSC channel provides information for signaling and management information for the WDM signals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an OSC channel and use an OSC filter, as taught by Persson et al., in the modified multiplexer/demultiplexer of Tamura et al., Persson and Nielsen et al. because an OSC channel provides information for signaling and management information for the WDM signals.

Regarding claims 9-12, Persson teaches in FIG. 1 that the channels are multiplexed at the sending side and demultiplexed at the receiving side. It is common sense that the compensation of the loss can be done totally in the sending side, totally in the receiving side or divided between the sending side and the receiving side, as long as the overall power levels for all the wavelength channel are equalized.

Regarding claims 23-24, Nielsen teaches in FIG. 4 terminal nodes connected by a fiber. The system of FIG. 4 comprises two or more multiplexer/demultiplexer apparatus. It is also understood that the node of FIG. 5 of Tamura et al. is being connected to another node with similar structure so that the two nodes can exchange information. Therefore, Tamura et al. implies a plurality of multiplexer/demultiplexer apparatus.

Response to Arguments

6. Applicant's arguments filed 21 January 2010 have been fully considered but they are not persuasive.

The Applicant argues "Applicants submit that none of the art of record, alone or in combination, teaches optical filters including 'Weight setting for realizing a loss characteristic

Art Unit: 2613

which compensates for the wavelength-dependent loss is made in the optical filters, and wavelength channels are assigned to the optical filters in such a manner that influences of accumulated insertion loss caused by the presence of the optical filters are suppressed,' as recited by claim 1, for example."

The Examiner disagrees. The newly added limitation is described on pages 20-22 of instant specification. The teaching of Persson reads on the limitation. Persson teaches in col. 2, line 10-17 that channels have the highest link losses are relayed through as few add/drop filter elements as possible. In particular, filter elements are arranged such that received channel wavelengths with a high link loss relative to an allowed link loss are dropped from said transmission medium upstream of received channel wavelengths with a low link loss relative to an allowed link loss. In this way, influences of accumulated insertion loss caused by the presence of the optical filters are suppressed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (6:30 a.m. - 4:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl

19 February 2010

/Shi K. Li/

Primary Examiner, Art Unit 2613